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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

KRUER, KEVIN R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 03/31/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/773,627

Applicant(s)

ARIYASU ET AL.

Examiner

Kevin R Kruer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 states that structural member (a) is composed of at least two elements each molded from resin compositions (a) which are different from each other. It is not clear whether "2 elements" refers to a blend or to 2 separate layers. Furthermore, it is not clear how each can comprise the same composition (composition (a) ) but be different from each other.
2. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear whether claim 11 is claiming that resin (a-2) comprises a resin composition comprising 2 components (one from the first markush group and at least one resin selected from the group consisting of modified olefinic polymers) or if the claim contains an improper Markush group and the "at least one resin selected from the group consisting of modified alpha olefinic polymers" is listed in the alternative.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 5, 9-11, 13, 14, 16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Koder et al (US 4,250,661). Koder teaches a covering multilayer film or sheet structure for agricultural application which consists essentially of :

(1) a film or sheet of a resin composition comprising (A) 100 parts by weight of a thermoplastic resin selected from the group consisting of olefinic resins and vinyl chloride resins and (B) about 1 to about 40 parts by weight of an acetal resin, and

(2) a layer of the thermoplastic resin (A) laminated at least one surface of the film or sheet (1) (abstract).

The olefinic resins may be comprised of olefinic resins including homopolymers or copolymers of alpha olefins and copolymers of alpha olefins with other comonomers copolymerized therewith. Specific examples include polyethylenes, polypropylenes, ethylene vinyl acetates, ethylene (meth)acrylic acids, chlorinated alpha olefins, and blends thereof (col 2, lines 47+). Preferred acetal resins have a degree of polymerization of about 500-3,500. Especially preferred acetal resins are those having terminal carboxyl groups (col 3, lines 19+). If the amount of acetal is too low, the thermal insulation of the covering material is not satisfactory. If the amount of acetal resin is too large, the sheet becomes hard and brittle (col 4, lines 33+).

With respect to claim 5, the examiner takes the position that said limitations are inherent to a polyacetal having terminal carboxyl groups and a degree of polymerization of 500-3,500, as taught by Koder. With respect to claim 10, the examiner takes the

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position that the chlorinated alpha olefin reads on the claimed "modified alpha olefinic polymer."

With regard to claim 19, the examiner takes the position that the process by which structural member (A) and structural member (B) are integrated does not result in a materially different product. Specifically, the method of "welding" will not materially affect the claimed product such that it is materially different than the product taught in the prior art.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 9-11, 13, 14, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koder et al (US 4,250,661) in view of Blemberg et al (US 5,108,844). Koder teaches a covering multilayer film or sheet structure for agricultural application which consists essentially of :

(1) a film or sheet of a resin composition comprising (A) 100 parts by weight of a thermoplastic resin selected from the group consisting of olefinic resins and vinyl chloride resins and (B) about 1 to about 40 parts by weight of an acetal resin, and

(2) a layer of the thermoplastic resin (A) laminated at least one surface of the film or sheet (1) (abstract).

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The olefinic resins may be comprised of olefinic resins including homopolymers or copolymers of alpha olefins and copolymers of alpha olefins with other comonomers copolymerized therewith. Specific examples include polyethylenes, polypropylenes, ethylene vinyl acetates, ethylene (meth)acrylic acids, chlorinated alpha olefins, and blends thereof (col 2, lines 47+). Preferred acetal resins have a degree of polymerization of about 500-3,500. Especially preferred acetal resins are those having terminal carboxyl groups (col 3, lines 19+). If the amount of acetal is too low, the thermal insulation of the covering material is not satisfactory. If the amount of acetal resin is too large, the sheet becomes hard and brittle (col 4, lines 33+).

Kodera does not teach that the laminate may comprise a third layer comprising polyacetal resin. However, Blemberg teaches that, if layers X and Y are to be adhered together at least one adhesive layer or tie layer can be used, wherein the tie layer comprises a blend of some or all of the components of X and some or all the components of Y (col 2, lines 21+). Therefore, it would have been obvious to one of ordinary skill in the art to interpose between layers (1) and (2) a tie layer comprising a blend of the components comprising layers (1) and (2).

With respect to claim 5, the examiner takes the position that said limitations are inherent to a polyacetal having terminal carboxyl groups and a degree of polymerization of 500-3,500, as taught by Kodera. With respect to claim 10, the examiner takes the position that the chlorinated alpha olefin reads on the claimed "modified alpha olefinic polymer."

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With regard to claim 19, the examiner takes the position that the process by which structural member (A) and structural member (B) are integrated does not result in a materially different product. Specifically, the method of "welding" will not materially affect the claimed product such that it is materially different than the product taught in the prior art.

3. Claims 1, 5, 6, 9-11, 13, 14, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koderá et al (US 4,250,661) in view of Sakurai et al (US 4,377,667). Koderá teaches a covering multilayer film or sheet structure for agricultural application which consists essentially of:

(1) a film or sheet of a resin composition comprising (A) 100 parts by weight of a thermoplastic resin selected from the group consisting of olefinic resins and vinyl chloride resins and (B) about 1 to about 40 parts by weight of an acetal resin, and

(2) a layer of the thermoplastic resin (A) laminated at least one surface of the film or sheet (1) (abstract).

The olefinic resins may be comprised of olefinic resins including homopolymers or copolymers of alpha olefins and copolymers of alpha olefins with other comonomers copolymerized therewith. Specific examples include polyethylenes, polypropylenes, ethylene vinyl acetates, ethylene (meth)acrylic acids, chlorinated alpha olefins, and blends thereof (col 2, lines 47+). Preferred acetal resins have a degree of polymerization of about 500-3,500. Especially preferred acetal resins are those having terminal carboxyl groups (col 3, lines 19+). If the amount of acetal is too low, the

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thermal insulation of the covering material is not satisfactory. If the amount of acetal resin is too large, the sheet becomes hard and brittle (col 4, lines 33+).

Kodera teaches that the polyacetal should comprise have a degree of polymerization of 500-3,500 and comprise copolymers of ethylene oxide and polyoxymethylene molecules (col 2, lines 19+). Kodera does not teach that the composition should comprise an aliphatic alcohol chain transfer agent. However, Sakurai discloses that molecular weights of polyacetals can be controlled by utilizing small amounts of water, methanol, and formic acid in the polymerization system. Thus, it would have been obvious to one of ordinary skill in the art to include water or methanol in the polymerization system of Kodera in order to control the degree of polymerization.

With respect to claim 5, the examiner takes the position that said limitations are inherent to a polyacetal having terminal carboxyl groups and a degree of polymerization of 500-3,500, as taught by Kodera. With respect to claim 10, the examiner takes the position that the chlorinated alpha olefin reads on the claimed "modified alpha olefinic polymer."

With regard to claim 19, the examiner takes the position that the process by which structural member (A) and structural member (B) are integrated does not result in a materially different product. Specifically, the method of "welding" will not materially affect the claimed product such that it is materially different than the product taught in the prior art.



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4. Claims 7, 8, 12, 15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koder et al (US 4,250,661) in view of Blemberg et al (US 5,108,844), as applied to claims 1-5, 9-11, 13, 14, 16, 17, and 19 above, and further in view of Matsuzaki et al (US 4,535,127). Koder et al in view of Blemberg is relied upon as above, but does not teach that the polyacetal should comprise the claimed block copolymer. However, Matsuzaki teaches a polyacetal copolymer composed of an acetal polymer portion and a thermoplastic elastomer portion having soft segments and hard segments (abstract). Said polymers have excellent impact resistance and fatigue resistance (col 1, lines 5+). The hard segment comprises ethylene propylene copolymers (the examiner notes that "ethylene propylene copolymers are synonymous in the art with hydrogenated polybutadiene (col 2, lines 53+). The acetal can be made by copolymerizing formaldehyde or trioxane (cyclic acetals) with cyclic ethers (col 4, lines 22+) and should have a molecular weight of 10,000-500,000. The elastomer portion of the polymer comprises 0.5-50wt% of the polymer (col 6, lines 58+). The examiner understands such a teaching to read on the claimed molecular weight limitation of the "hydrogenated butadiene segment" in claim 8 because 0.5-50wt% of 10,000-50,000 reads on the claimed molecular weight range. It would have been obvious to one of ordinary skill in the art to utilize the copolymer of Matsuzaki as the polyacetal taught in Koder et al because said copolymer has excellent impact resistance and fatigue resistance.

With respect to the chain transfer agent of claim 7, the examiner takes the position that the identity of said transfer agent does not inherently affect the properties

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of the claimed copolymer. Thus, the copolymer taught in Matsuzaki is understood to read on the copolymer claimed in claim 7.

5. Claims 1-4, 10, 11, 13, 16, 17, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844). Polyplastics teaches a high mechanical strength laminate obtained by laminating polyacetal resin layer and an olefin resin layer containing modified olefin. Said laminate is especially useful in molding materials.

Polyplastics does not teach that the laminate should comprise a tie layer. However, Blemberg teaches that, if layers X and Y are to be adhered together at least one adhesive layer or tie layer can be used, wherein the tie layer comprises a blend of some or all of the components of X and some or all the components of Y (col 2, lines 21+). Therefore, it would have been obvious to one of ordinary skill in the art to interpose a tie layer between layers the taught polyacetal and olefinic resin layers, wherein the tie comprises a blend of polyacetal and olefin resin, because Blemberg teaches a layer of such a composition would be useful as a tie layer in a laminated structure.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844) as applied to claims 1-4, 10, 11, 13, 16, 17, 19, 21, and 22 above, and further in view of JP 58-053953A (herein referred to as JSR). Polyplastics in view of Blemberg is relied upon as above, but does not teach that the polyolefin layer may also contain polyamide.

However, JSR teaches that aromatic polyamide fibers may be added to the polyolefin

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composition in order to control the compositions mechanical properties. Therefore, it would have been obvious to one of ordinary skill in the art to add aromatic polyamide fibers to the polyolefin layer taught in Polyplastics in order to improve the laminate's mechanical properties.

7. Claims 7, 8, 12, 20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844) as applied to claims 1-4, 10, 11, 13, 16, 17, 19, 21, and 22 above, and further in view of Matsuzaki et al (US 4,535,127). Koderia in view of Blemberg is relied upon as above, but does not teach that the polyacetal should comprise the claimed block copolymer. However, Matsuzaki teaches a polyacetal copolymer composed of an acetal polymer portion and a thermoplastic elastomer portion having soft segments and hard segments (abstract). Said polymers have excellent impact resistance and fatigue resistance (col 1, lines 5+). The hard segment comprises ethylene propylene copolymers (the examiner notes that "ethylene propylene copolymers are synonymous in the art with hydrogenated polybutadiene (col 2, lines 53+). The acetal can be made by copolymerizing formaldehyde or trioxane (cyclic acetals) with cyclic ethers (col 4, lines s 22+) and should have a molecular weight of 10,000-500,000. The elastomer portion of the polymer comprises 0.5-50wt% of the polymer (col 6, lines 58+). The examiner understands such a teaching to read on the claimed molecular weight limitation of the "hydrogenated butadiene segment" in claim 8 because 0.5-50wt% of 10,000-50,0000 reads on the claimed molecular weight range. It

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would have been obvious to one of ordinary skill in the art to utilize the copolymer of Matsuzaki as the polyacetal taught in Koderä because said copolymer has excellent impact resistance and fatigue resistance.

With respect to the chain transfer agent of claim 7, the examiner takes the position that the identity of said transfer agent does not inherently affect the properties of the claimed copolymer. Thus, the copolymer taught in Matsuzaki is understood to read on the copolymer claimed in claim 7.


### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 703-305-0025. The examiner can normally be reached on Monday-Friday from 7:00a.m. to 4:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is 703-305-5408.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*K-RK*  
krk

  
Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700